

Japanese Utility Model Kokai No. 60-157674

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Applicant: Lion Co. Ltd., Tokyo

Claims:

1. A receptacle for discharging variable quantitative liquid comprising:

a receptacle main 3 with a contractable bellow portion 2,

a guiding port 9 capable of guiding out the content in said receptacle main 3, and

a reservoir 4 communicating with said guide port 9 and capable of storing the content, said reservoir 4 being provided with a discharging port of the content and an overflow port communicating with a reflux flow passage which can feed the content back into said receptacle main 3, and said overflow port can be varied in its height position.

2. The receptacle according to claim 1, wherein said reservoir 4 is placed at the top of said receptacle main 3.

3. The receptacle according to any of claims 1 and 2, wherein said reservoir 4 is provided internally with a first overflow tube whose peripheral wall is formed with a first opening part and a second overflow tube whose peripheral wall is formed with a second opening part and which is rotatably fitted to the peripheral wall of said first overflow tube, said first and second opening parts can adjust the mutually matching port position toward the depth of said reservoiring part by means of the relative rotational operation with the first and second overflow tubes, and said matching port forms an overflow port communicating with said reflux flow passage.

4. The receptacle according to claim 1, wherein said first overflow tube or said second overflow tube forms an overflow guiding port which communicates with the inside of said reservoir, in a place higher than the highest position of said overflow port.

Related Disclosure:

The invention will now be described more in detail, by way of embodiments, with reference to the accompanying drawings.

In the embodiment show in Fig. 1, a reservoir 4 storing a content is fitted to the upper end of a receptacle main 3 which is composed of a cylindrical portion 1 hardly deformable even applied with an external force, and a contractable bellow portion 2 which easily contracts by an external force and can recover its original configuration by its own force, and a lid 5 is rotatably mounted to the upper end of said reservoir 4 thereby constituting a receptacle for discharging variable quantitative liquid.

The upper end of said receptacle main 3 is formed with an opening 6 capable of entirely opening the receptacle, and said opening is sealed by a bottom plate 7 of said reservoir 4. Then, a communication tube 8 is provided piercing the bottom plate 7, a guiding-out tube 10 having a guiding port 9 of the content stored in the receptacle main 3 is connected to a portion protruding in the bellow portion 2, of said communication tube 8, and a slit-like overflow reflux flow port 11 is formed in the lengthy direction of the communication tube 8, in a portion protruding in the reservoir 4, of the communication tube 8.

On the one hand said receptacle main 3 and the reservoir 4 are tightly connected, and on the other hand said lid 5 is provided

projectingly with an overflow guiding tube 12 of the content in such a manner that it may be directed into the reservoir 4. However, said overflow guiding tube 12 is fitted slidably and rotatably at the outer peripheral surface side of the portion of forming the overflow reflux flow port 11 of said communication tube 8, said sliding and rotating portion is formed with a slit-shaped and inclined overflow reflux port 13, and an overflow guiding inlet 14 of the content opens above said sliding and rotating portion. In the drawings, the reference numeral 5' shows a knob for rotating the lid 5, and 15 designates a discharge nozzle of the content and it is shaped capable of engaging and disengaging a cap (not shown). In addition, the reference numeral 16 is a matching portion of the receptacle main 3 with the reservoir 4.

Then, the invention will be described with regard to the function of the receptacle according to this embodiment. In containing the content in the receptacle 3, the content is contained, for example, to the upper end position of the cylindrical part 1, and the lid 5 is sealed by matching with the receptacle main 3. Then, when the content is quantitatively and repeatedly discharged, the lid 5 is rotated relative to the reservoir 4 in response to the set value of a certain amount while the receptacle is erected upright as it is, and the position of the matching port of the overflow reflux ports 11 and 13 is set to a desired height whereafter the lid 5 is pressed from the upper side to compress the bellow portion 2.

That is, in said discharging operation, since atmospheric air is sealed in the upper part of the content, the content in

the quantity corresponding to the compression volume at the compression of said bellow portion rises in the guiding tube 10, and it flows from the overflow guiding port 14 into the reservoir 4 (part of the content flows in even from the matching port of the overflow reflux ports 11 and 13). However, as a result that if said pressurizing force is released the bellow portion 2 intends to return to the state before the contraction by pressurization, by means of its controlling force, the air is subject to a suction from the discharge nozzle 15 into the reservoir 4, and of the content in the reservoir 4, the one contained higher than said matching port descends in reflux within the guiding tube 10 together with the sucked air so as to be fed back to the receptacle main 3 thereby resulting in that the atmospheric air is again sealed in the upper portion in the receptacle 3. Thus, the content in the quantity regulated by said matching port position is stored in the reservoir 4, and if the receptacle is inclined the content can be discharged from the discharge nozzle 15. In addition, a lock mechanism (now shown) is provided to prevent the lid 5 from rotation relative to the reservoir 4 when the lid 5 is pressed.

Thus, in the above embodiment, it is preferable to provide the discharge nozzle 15 in a position sufficiently higher than the overflow guiding port 14, and it no longer needs to worry about the direct flow of the overflow content from the overflow guiding port 14 into the discharge nozzle 15. Further, it may be possible that the overflow guiding port 14 is omitted, and the overflow reflux ports 11 and 13 are formed not to agree with each other depending on the rotating position of the lid 5. It is also possible to avoid a trouble in which the receptacle is overturned in error to discharge the contents.

Furthermore, Fig. 2 show another embodiment where it is capable of omitting said overflow guiding port 14 and making it served by said matching port. In that case, the content in the reservoir 4 can be quickly fed back to the receptacle main 3 thereby controlling the liquid level in the reservoir 4 after said feeding back certainly and quickly to the height position of the matching port. Alternatively, the cylindrical part 1 may be omitted and the receptacle main 3 may be constituted by the bellow portion 2 alone.

Thus, in the embodiment shown in Fig. 2 the reservoir 4 is arranged projectingly in the lid 5, said lid is fitted rotatably relative to the receptacle main 3, and an inner lid 10' with the guiding tube 10 is fastened to the receptacle main 3 so as not to be mutually rotated. Near the upper end of said guiding tube 10 a slit-like inclined overflow reflux port 13 is formed while in a protruding tube 5" provided in the lid 5 a slit-like overflow reflux port 11 is formed in its lengthy direction.

In discharging the content, the lid 5 is turned for a suitable angle by a knob 5' relative to the receptacle main 3 (therefore relative to the guiding tube 10), and in the same way as the embodiment of Fig. 1, the matching port portion of the overflow reflux ports 11 and 13 is set to a desired height whereafter it will be all right to press the lid 5 from the upper side by the knob 5' to allow the bellow portion 2 to be compressed.

Additionally, in the embodiment shown in Fig. 2 the overflow reflux ports 11, 13 may be omitted and the whole amount of the pressed-out content may be flown into the reservoir 4. Further, it is also possible that the overflow reflux port 11, 13 are

omitted, said protruding tube 5" is made vertically movable relative to the lid 5, and the discharging amount of the content is regulated depending on the height position of the upper end opening of said protruding tube 5".

According to the present invention, the guiding port 9 opens preferably as near the bottom surface of the cylindrical part 1 as possible. However, it is also effective that the guiding tube 10 is disposed in such a manner that its lower end may abut against the bottom surface of the cylindrical part 1 at the pressing operation of the lid, a bellow portion is provided in the middle part in the lengthy direction of the guiding tube 10, and the guiding port 9 is opened in the peripheral wall in the lower end of the guiding tube 10. Through such constitution almost the whole amount of the content can advantageously be discharged.

Further, according to the present invention, it may be possible that the overflow guiding tube 12, the overflow reflux ports 11 and 13, and the overflow guiding port 14 are omitted, and said communication tube 8 is arranged in the direct of the center line of the receptacle main 3 and in such a way that it can be reciprocally slided relative to the bottom plate 7 whereby the storing amount of the content in the reservoir 4 can be set depending on the opening position at the upper end of the communication tube 8.

Brief Description of the Drawings:

Fig. 1 is a sectional view of the first embodiment of the invention; and

Fig. 2 is a sectional view of another embodiment of the invention.

In the drawings:

- 1...Cylindrical part
- 2...Bellow part
- 3...Receptacle main
- 4...Reservoir
- 5...Lid
- 5'...Knob
- 5"...Protruding tube
- 6...Opening
- 7...Bottom plate
- 8...Communication tube
- 9...Guiding port
- 10...Guiding tube
- 10'...Innter lid
- 11...Overflow reflux port
- 12...Overflow guiding tube
- 13...Overflow reflux port
- 14...Overflow guiding port
- 15...Discharge nozzle
- 16...Matching/fitting part

⑫ 公開実用新案公報(U)

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⑳ 実用新案登録請求の範囲

- 1 伸縮可能な蛇腹部を有する容器本体と、この容器本体中に収容された内容物を導出する導出口部と、該導出口部と連通し内容物を貯留する貯留部とを備えてなり、該貯留部は内容物排出部と、内容物を前記容器本体内に返送する還流流路と連通する溢流口とを備え、該溢流口はその高さ位置を可変とされていることを特徴とする液体用可変定量排出容器。
- 2 前記貯留部が、前記容器本体の頂部に載置されているものである実用新案登録請求の範囲第1項記載の可変定量排出容器。
- 3 前記貯留部が、その内部に、第1の開口部を周壁に形成された第1の溢流管と、第2の開口部を周壁に形成されかつ前記第1の溢流管の周壁に回動可能に嵌装された第2の溢流管とを備えているものであり、前記第1及び第2の開口部は、第1及び第2の溢流管との相対的回動操作により互いの合致口位置を前記貯留部の深さ

方向に調節しうるものであり、前記合致口は前記還流流路と連通する溢流口を形成しているものである実用新案登録請求の範囲第1項又は第2項記載の可変定量排出容器。

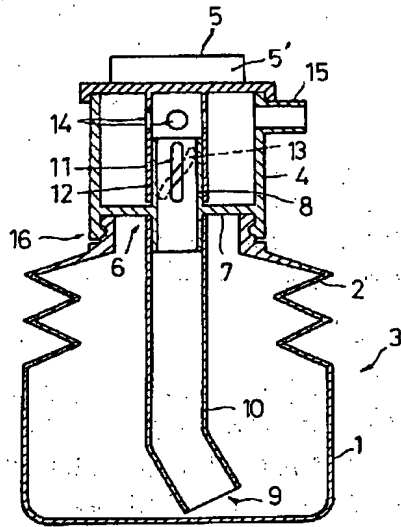
- 4 前記第1の溢流管又は第2の溢流管が、前記溢流口の最高位置より高位置に前記貯留部の内部と連通する溢流導入口を形成されているものである実用新案登録請求の範囲第3項記載の可変定量排出容器。

図面の簡単な説明

第1図は、本考案の一実施例の断面図、第2図は別の実施例の断面図である。

1…筒状部、2…蛇腹部、3…容器本体、4…貯留部、5…蓋体、5'…つまみ、5''…突出管、6…開口部、7…底板、8…連通管、9…導出口、10…導出管、10'…中蓋、11…溢流還流口、12…溢流導入管、13…溢流還流口、14…溢流導入口、15…排出ノズル、16…嵌合部。

第 1 図



第 2 図

